HCD-RG222

SERVICE MANUAL

Ver 1.0 2004.04

AEP Model
UK Model
E Model
Australian Model

- HCD-RG222 is the tuner, deck, CD and amplifier section in MHC-RG222.

CD Section	Model Name Using Similar Mechanism	New
	CD Mechanism Type	CDM74-F1BD81
	Optical Pick-up Name	KSM-215DCP/C2NP
Tape deck Section	Model Name Using Similar Mechanism	New
	Tape Transport Mechanism Type	CWM43FF-05

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SPECIFICATIONS

Amplifier section

The following measured at AC 120, 127, 220, 240 V 50/60 Hz

DIN power output (rated): 100 + 100 watts (6 ohms at 1 kHz, DIN)

Continuous RMS power output (reference): 120 + 120 watts (6 ohms at 1 kHz, 10% THD)

CD player section

System	Compact disc and digital audio system
Laser	Semiconductor laser (λ=780 nm) Emission duration: continuous
Frequency response	2 Hz – 20 kHz (±0.5 dB)
Wavelength	780 – 790 nm
Signal-to-noise ratio	More than 90 dB
Dynamic range	More than 90 dB

Tape deck section

Recording system	4-track 2-channel, stereo
Frequency response	50 – 13,000 Hz (±3 dB), using Sony TYPE I cassettes

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range

Russian model:	65.0 – 74.0 MHz (There is no stereo effect. 10-kHz step)
	87.5 – 108.0 MHz (50-kHz step)
Other models:	87.5 – 108.0 MHz (50-kHz step)
Antenna	FM lead antenna
Antenna terminals	75 ohms unbalanced
Intermediate frequency	10.7 MHz

AM tuner section

Tuning range

European, Russian and Saudi Arabian models:

	531 – 1,602 kHz (with the tuning interval set at 9 kHz)
Other models:	530 – 1,710 kHz (with the tuning interval set at 10 kHz)
	531 – 1,602 kHz (with the tuning interval set at 9 kHz)
Antenna	AM loop antenna
Antenna terminals	External antenna terminal
Intermediate frequency	450 kHz

General

Power requirements

European and Russian models:

	230 V AC, 50/60 Hz
Australian model:	230 – 240 V AC, 50/60 Hz
Argentine models:	220 V AC, 50/60 Hz
Mexican models:	127 V AC, 60 Hz
Saudi Arabian model:	120 – 127/220 or 230 – 240 V AC, 50/60 Hz Adjustable with voltage selector
Other models:	120 V, 220 V or 230 – 240 V AC, 50/60 Hz Adjustable with voltage selector

Power consumption

European and Russian models:

	110 watts
	0.25 watts (at the Power Saving Mode)
Other models:	180 watts

Dimensions (w/h/d) incl. projecting parts and controls

Amplifier/Tuner/Tape/CD section: Approx. 280 × 327 × 425 mm

— Continued on next page —

MINI HI-FI COMPONENT SYSTEM

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Home Audio Company
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SECTION 4
TEST MODE

[Change-over of AM Tuner Step between 9 kHz and 10 kHz]

- A step of AM channels can be changed over between 9 kHz and 10 kHz.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Select the function "TUNER", and press [TUNER/BAND] button to select the BAND "AM".
3. Press [I/⏻] button to turn the set OFF.
4. Press [TUNER/BAND] and [I/⏻] buttons simultaneously, and the display of fluorescent indicator tube changes to "AM 9 k STEP" or "AM 10 k STEP", and thus the channel step is changed over.

[Cold Reset]

- The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. Press three buttons [■], [PLAY MODE/TUNING MODE], and [DISC 1] simultaneously.
2. The fluorescent indicator tube displays "COLD RESET" and the set is reset.

[Aging Mode]

This mode can be used for operation check of CD section and tape deck section.

- If an error occurred:
  The aging operation stops and is displayed status.
- If no error occurs:
  The aging operation continues repeatedly.

1. Operating method of Aging Mode

Turn on the main power and select "CD" of the function.

1) Set three discs in tray. Select ALL DISCS, and REPEAT OFF.
2) Load the tapes recording use into both decks.
3) Press three buttons [■], [PLAY MODE/TUNING MODE], and [EX-CHANGE] simultaneously.
4) Aging operations of CD and tape are started at the same time.
5) To exit the aging mode, perform [Cold Reset].

2. Aging mode in CD section

1) Operation during aging mode

- In the agining mode ,the program is excuted in the following sequence.

(1) The disc tray opens and closes.
(2) The disc tray turns to select a disc 3.
(3) The pick-up accesses to the first track, and plays 3 seconds.
(4) The pick-up accesses to the last track, and plays 3 seconds.
(5) The disc tray opens and closes.
(6) The disc tray turns to select a disc 1.
(7) The same operation starts like step (3).
(8) After a disc 1 aging operation, a disc 2 is selected.
(9) When an aging operation of a disc 3 is completed, the display "AGING ****" value increases.
(10) If no error occurs, the aging operation continues repeatedly.

2) Error display

Disc error	
Display	Error
E00D01022	Focus error (No disc)
E00D02022	Sub Q error (Focus is good)
E00D02023	TOC reading error
E00D02014	Access error (Unable within regular time)

Mechanism error	
Display	Error
E00M__E_0	Error during opening tray
E00M__C_2	EX-CHANGE disc error
E00M__D_0	Error during closing tray
E00M__F_3	EX-OPEN error
E00M__D_5	EX-CLOSE error
E00M__C_2	Chuck-up error
E00M__C_3	Unchucking error

3. Aging mode in Tape Deck section

1) Operation during aging mode

- In the agining mode, the program is excuted in the following sequence.

Step	Operation	Display
1	Rewind the TAPE A	TAPE AAG-1
2	Rewind the TAPE B	TAPE BAG-2
3	Play the TAPE A (1 minute)	TAPE AAG-2
4	Stop the TAPE A (1 second)	TAPE AAG-3
5	Play the TAPE A (3 minutes)	TAPE AAG-4
6	Rewind(AMS) the TAPE A	TAPE AAG-5
7	F.F.(AMS) the TAPE A	TAPE AAG-6
8	Play the TAPE B (1 minute)	TAPE BAG-2
9	Stop the TAPE B (1 second)	TAPE BAG-3
10	Record the TAPE B (3 minutes)	TAPE BAG-4
11	Rewind(AMS) the TAPE B	TAPE BAG-5
12	F.F.(AMS) the TAPE B	TAPE BAG-6

2) Error display

- If error occurred, the display remains like "TAPE BAG-2".

4. Exiting from the aging mode

- Be sure to perform Cold Reset to exit from the aging mode.

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[PANEL Test Mode]

- All fluorecent segments and LEDs are tested.
- Keyboard check.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. To enter the test mode, press the three buttons [■], [PLAY MODE/TUNING MODE] and [ENTER] simultaneously.
3. All segments and LEDs (without STANDBY LED) are turned on.
4. Press [▮▮] and [ENTER] buttons simultaneously, and the key check mode is activated.
5. The message “KEY 0 0 0 ” is displayed.
   Each time a button is pressed, the key code number is displayed.
6. Press [▮▮] and [ENTER] buttons simultaneously, and the key count mode is activated.
7. The message “KEYCNT 0” is displayed.
   Each time a button is pressed, “KEYCNT 0” value increased. However, once a button is pressed, it is no longer taken into account.
8. Press [▮▮] and [ENTER] buttons simultaneously, and the head phone detect mode is activated.
9. The message “H_P OFF” is displayed when a headphone jack is not inserted.
   “H_P ON ” is displayed when a headphone jack is inserted.
10. Press [▮▮] and [ENTER] buttons simultaneously, and the volume control detect mode is activated.
11. The message “VOLUME FLAT” is displayed.
    “VOLUME UP” is displayed if rotating [MASTER VOLUME] knob clockwise, or “VOLUME DOWN” is displayed if rotating counterclockwise.
12. To exit from the GC test mode after the head phone detect mode, press [▮▮] and [ENTER] buttons simultaneously.

[Version and Destination Display Mode]

- The version or destination is displayed.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. To enter the test mode, press the three buttons [■], [PLAY MODE/TUNING MODE] and [DISC 2] simultaneously.
3. The destination is displayed.
4. Press [DISPLAY] buttons simultaneously.
5. The version is displayed.
6. To exit from this mode, press [I/⏻] button to turn the set OFF.

[CD Service Mode]

- This mode can run the CD sled motor freely. Use this mode, for instance, when cleaning the pick-up.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Select the function “CD”.
3. To enter the test mode, press three buttons [■], [PLAY MODE/TUNING MODE], and [⏏] simultaneously.
4. The CD service mode is selected.
5. With the CD in stop status, press [▶▶] button to move the pick-up to outside track, or press [◀◀] button to inside track.
6. To exit from this mode, perform as follows:
   1) Move the pick-up to the most inside track.
   2) Press [I/⏻] button to turn the set OFF.

Note:
- Always move the pick-up to most inside track when exiting from this mode. Otherwise, a disc will not be unloaded.
- Do not run the sled motor excessively, otherwise the gear can be chipped.

[MC Test Mode]

- This mode is used to test the function of the equalizer.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. To enter the test mode, press the three buttons [■], [PLAY MODE/TUNING MODE] and [DISC 3] simultaneously.
3. Press the [EQ +] button.
   The function of the equalizer is set to “MIN”.
4. Press the [EQ -] button.
   The function of the equalizer is set to “MAX”.
5. Press the [PRESET EQ] button.
   The function of the equalizer is set to “EQ FLAT”.
6. [MASTER VOLUME] up and down.
   “VOLUME MIN” “VOLUME 16” “VOLUME MAX” is displayed.
7. Press the [GROOVE] button.
   The message “VACS OFF” or “VACS ON” is displayed.
8. To exit from this mode, press [I/⏻] button to turn the set OFF.

[CD Ship Mode (LOCK)]

- This mode moves the pick-up to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Select the function “CD”.
3. Press [I/⏻] button to turn the set OFF.
4. Press [CD] button and [I/⏻] button simultaneously.
5. The “STANDBY” display blinks instantaneously, and the CD ship mode is set.

[CD Ship (LOCK) & COLD RESET MODE]

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Select the function “CD”.
3. Press [I/⏻] button to turn the set OFF.
4. Press three buttons [■] , [CD] and [DISPLAY] simultaneously.
5. The “STANDBY” display blinks instantaneously and CD ship mode is set.
6. To fluorescent indicator tube displays “COLD RESET” and the set is reset.

[Disc Tray Lock]

Procedure:

1. Press the [I/⏻] button to turn the set ON.
2. Press two buttons of [■] and [⏏] simultaneously for five seconds.
3. The message “LOCKED” is displayed and the tray is locked. (Even if exiting from this mode, the tray is still locked.)
4. Press two buttons of [■] and [⏏] simultaneously for five seconds again.
5. The message “UNLOCKED” is displayed and the tray is unlocked.
6. To exit from this mode, press the [I/⏻] button to turn the set OFF.

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[CD Repeat 5 Times Limit Release Mode]

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Select the function “CD”.
3. Press three buttons [■] , [CD] and [ENTER] simultaneously.
4. The message “LIMIT OFF” is displayed.
5. Press [I/⏻] button the set OFF.

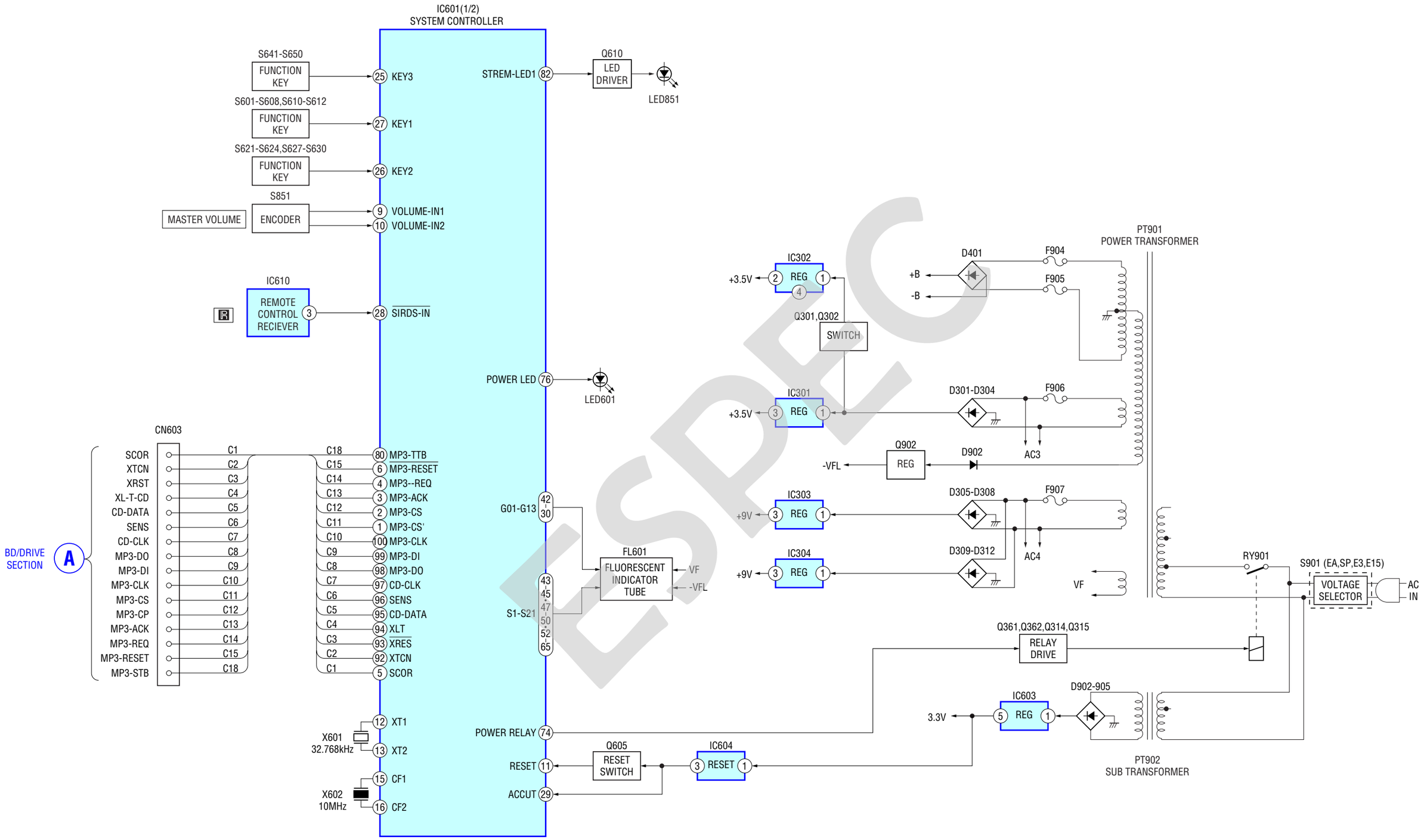
[AMP TEST MODE]

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. To enter the test mode, press three buttons [■] , [PLAY MODE/TUNING MODE] and [ENTER] simultaneously.
3. Press the [DISPLAY] button.
   The message “V0 0 0” “ 000” is displayed.
4. Press the [GROOVE] button.
   The message “DBFB ON” “DBFB OFF” is displayed.
5. Press the [SURROUND] button.
   The message “SURROUND ON” “SURROUND OFF” is displayed.
6. Press the [EQ BAND] button.
   The message “LOW” “MID” “HIGH” is displayed.
7. Press [I/⏻] button to turn the set OFF.

ESPEC

5-1. BLOCK DIAGRAMS – PANEL SECTION –



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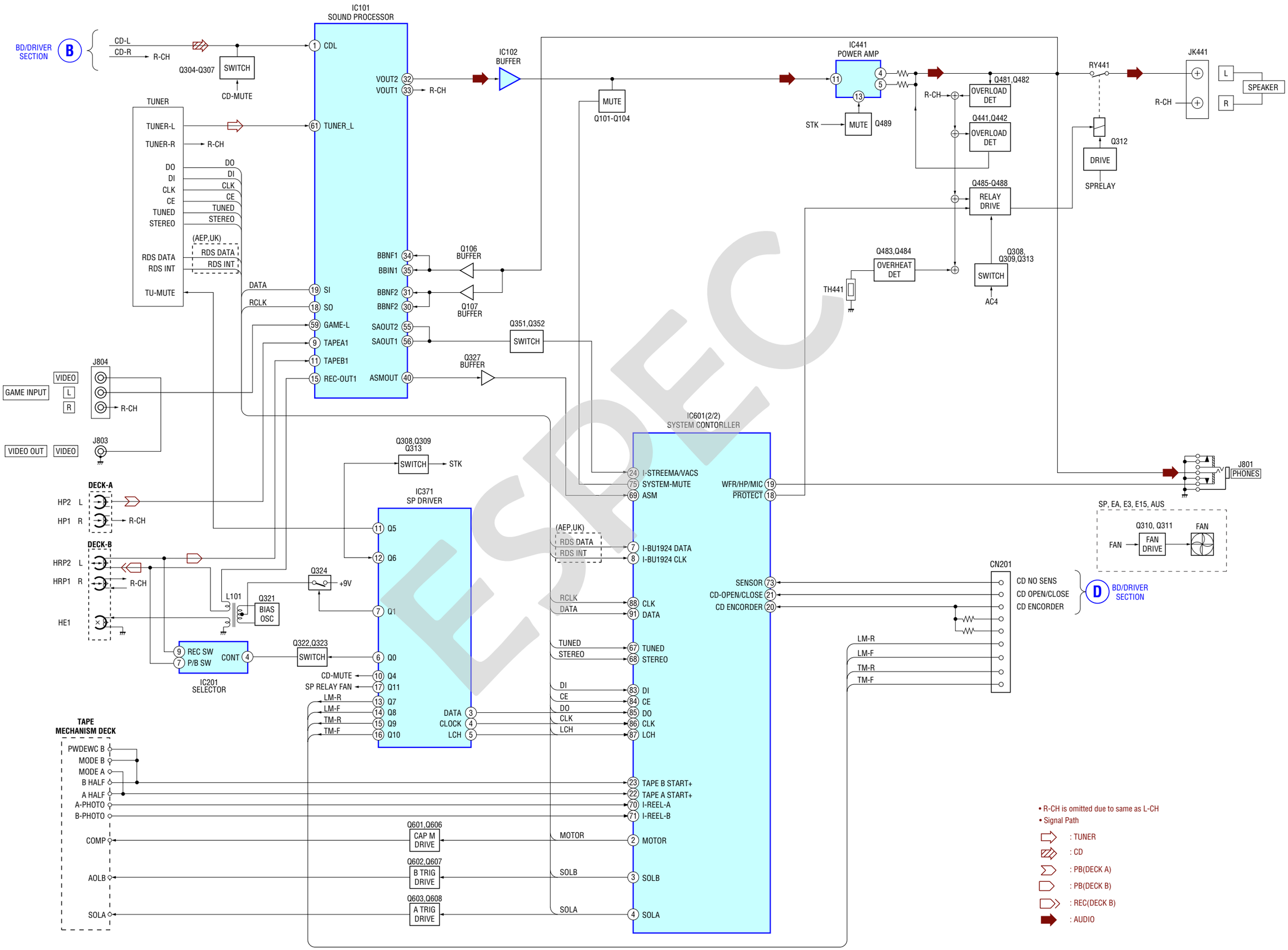
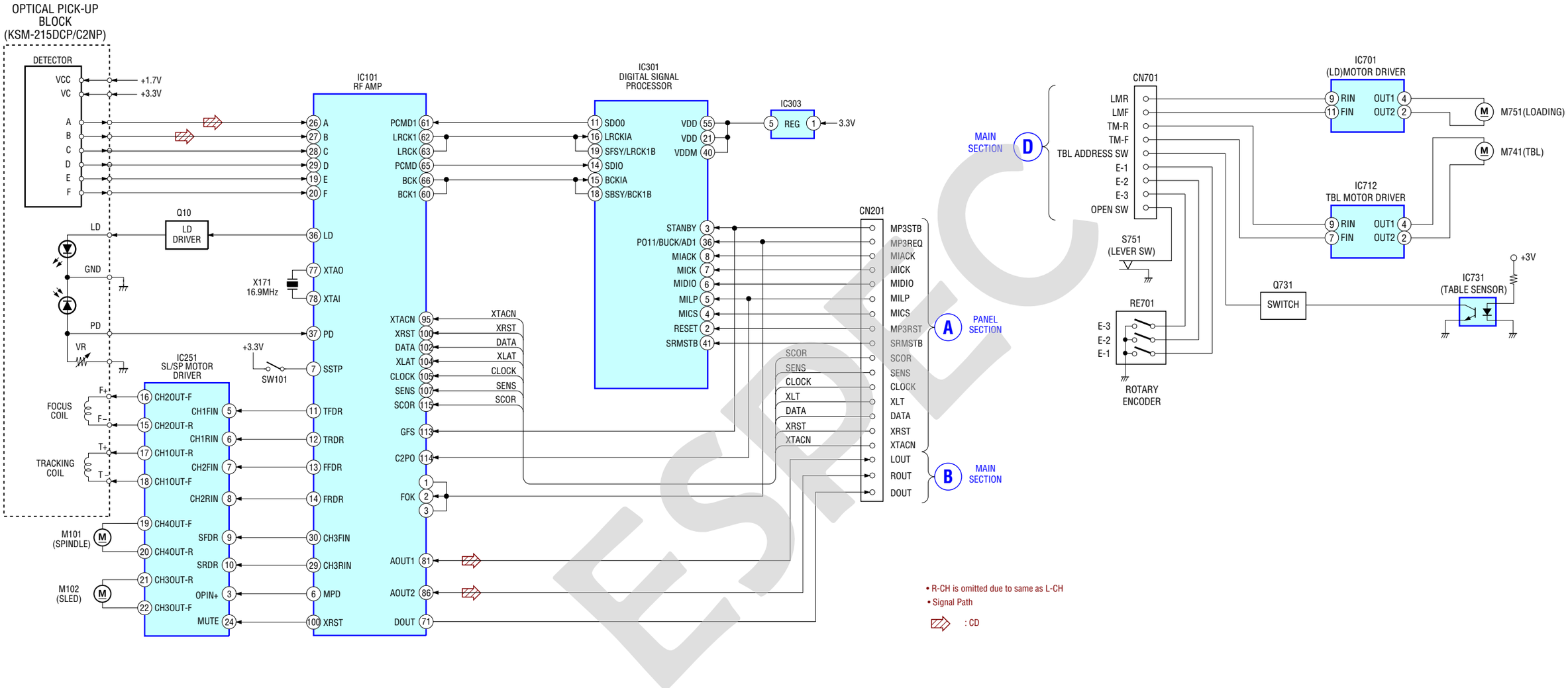
– MAIN SECTION –

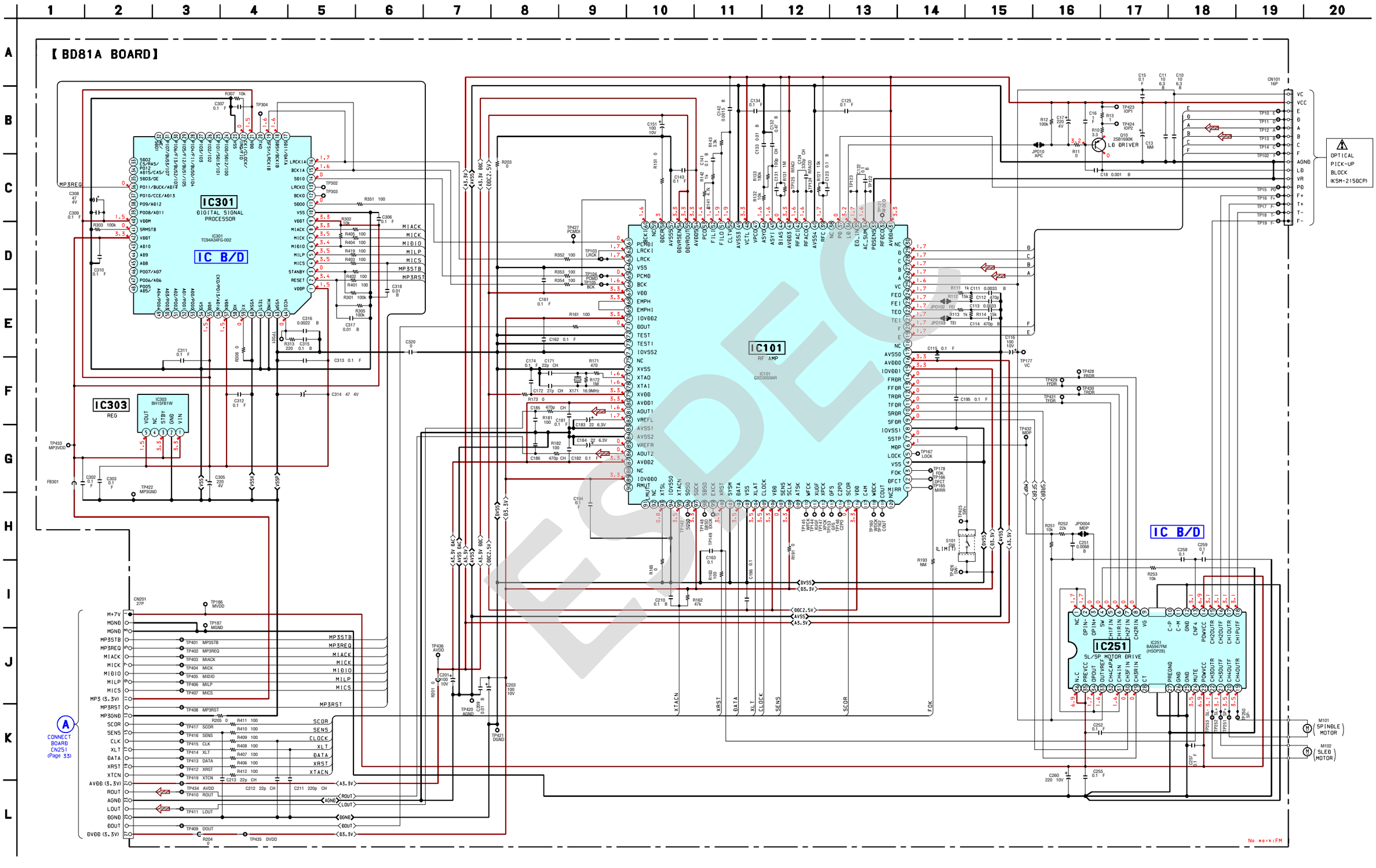


– BD/DRIVER SECTION –

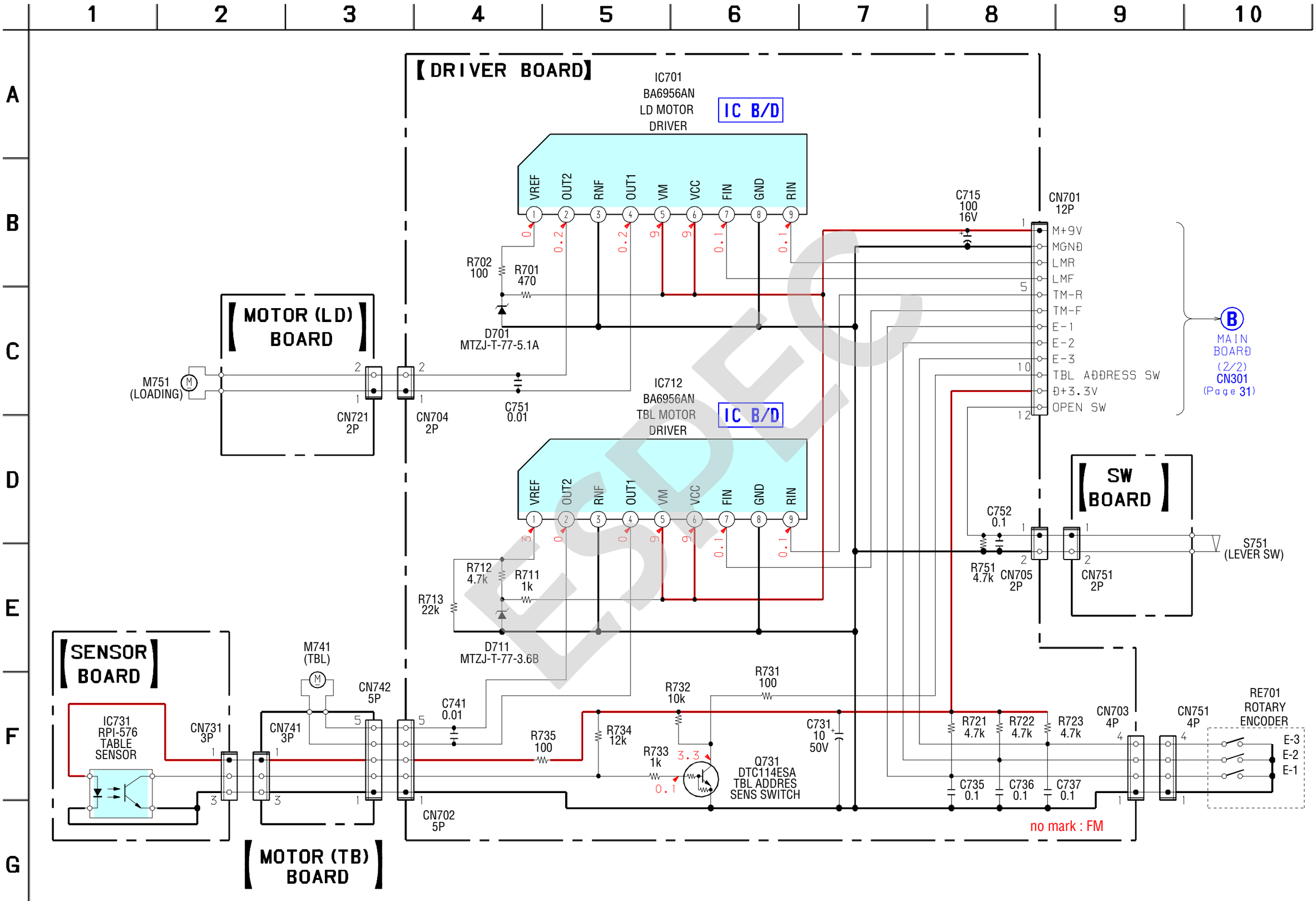


5-3. SCHEMATIC DIAGRAM – BD81A SECTION –

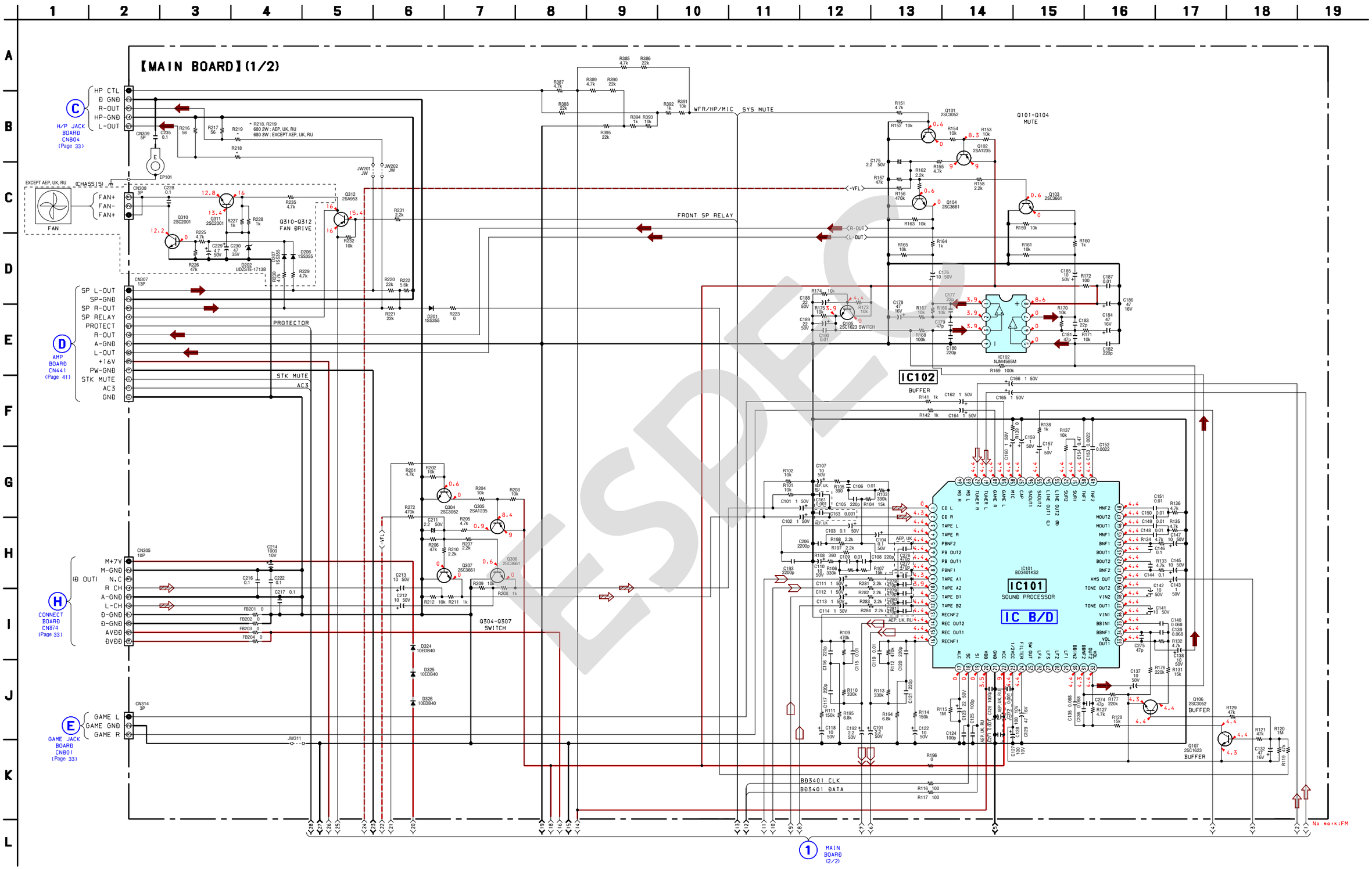
• See page 44 for IC PIN FUNCTION DESCRIPTION.



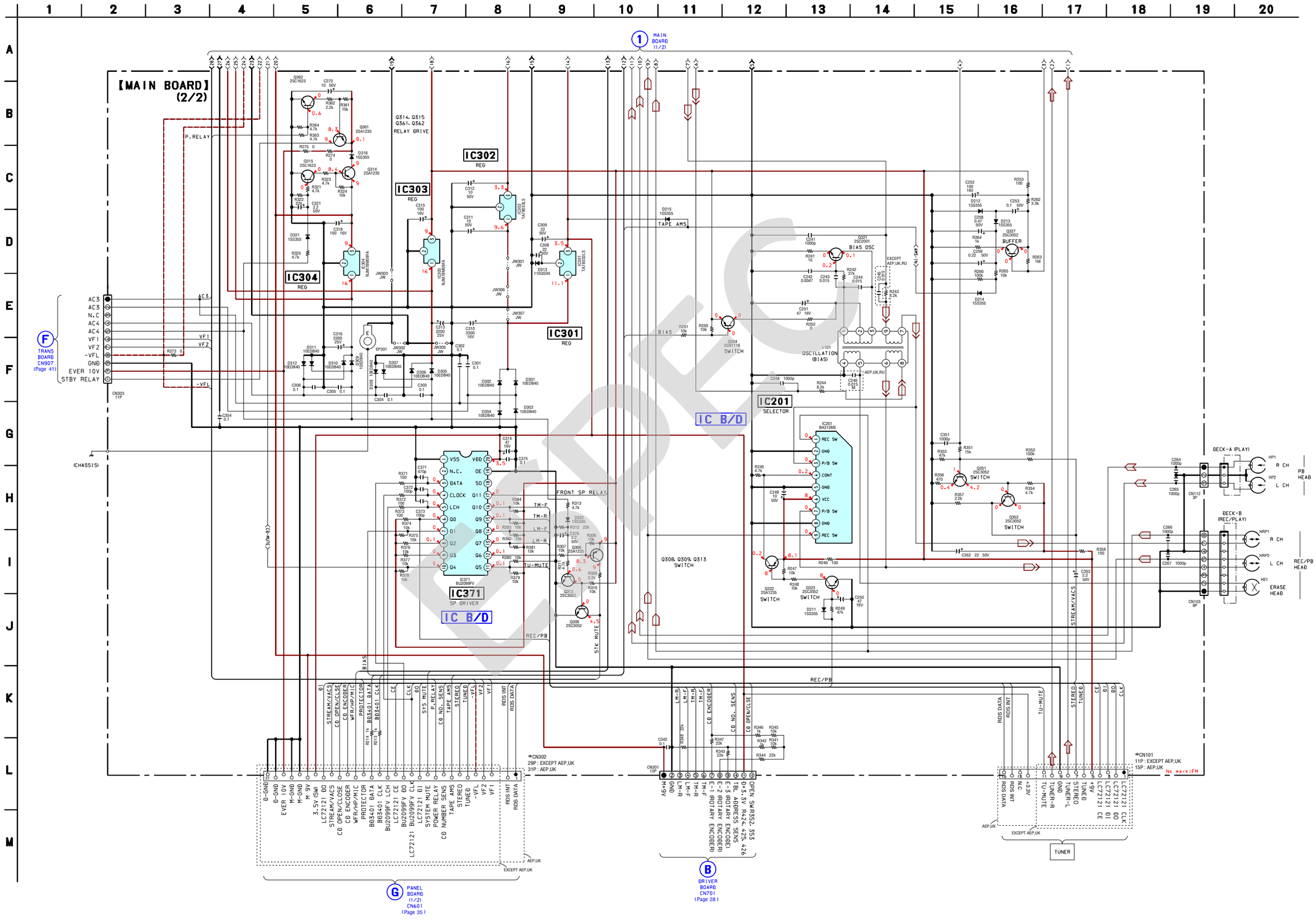
5-5. SCHEMATIC DIAGRAM – CD MECHANISM SECTION –



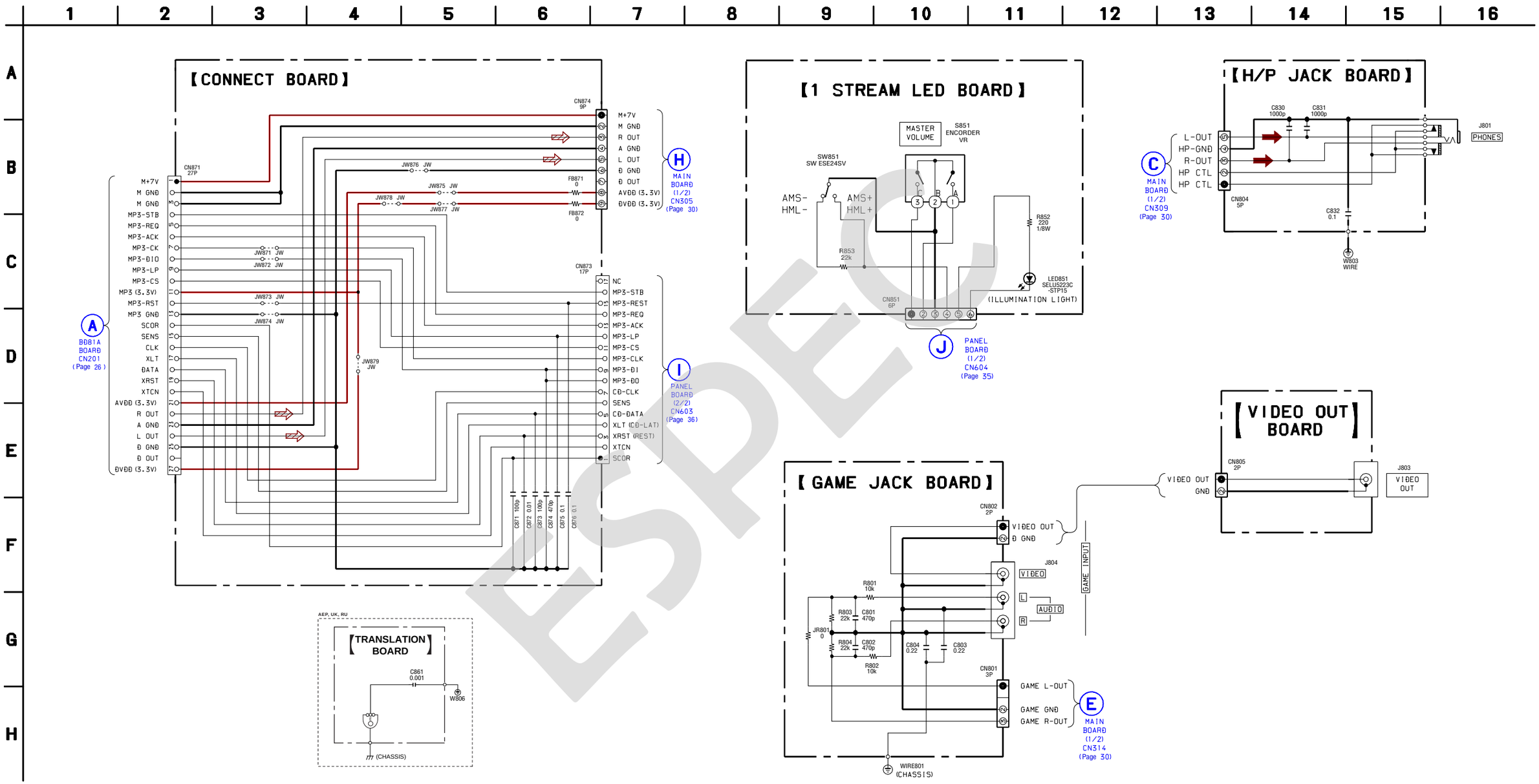
5-7. SCHEMATIC DIAGRAM – MAIN SECTION (1/2) –



5-8. SCHEMATIC DIAGRAM – MAIN SECTION (2/2) –



5-10. SCHEMATIC DIAGRAM – PANEL COMB SECTION –



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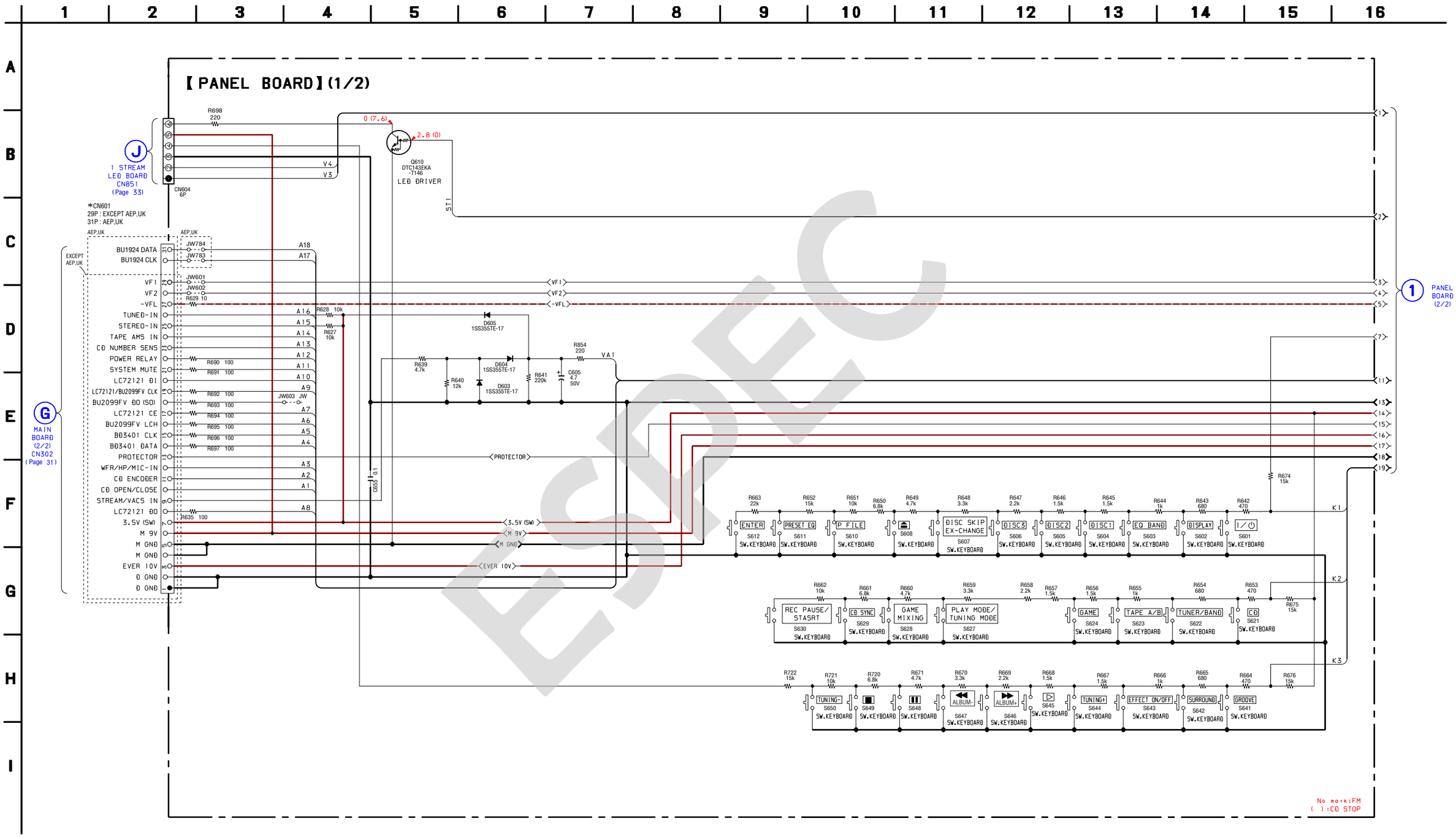
5-12. SCHEMATIC DIAGRAM – PANEL SECTION (1/2) –



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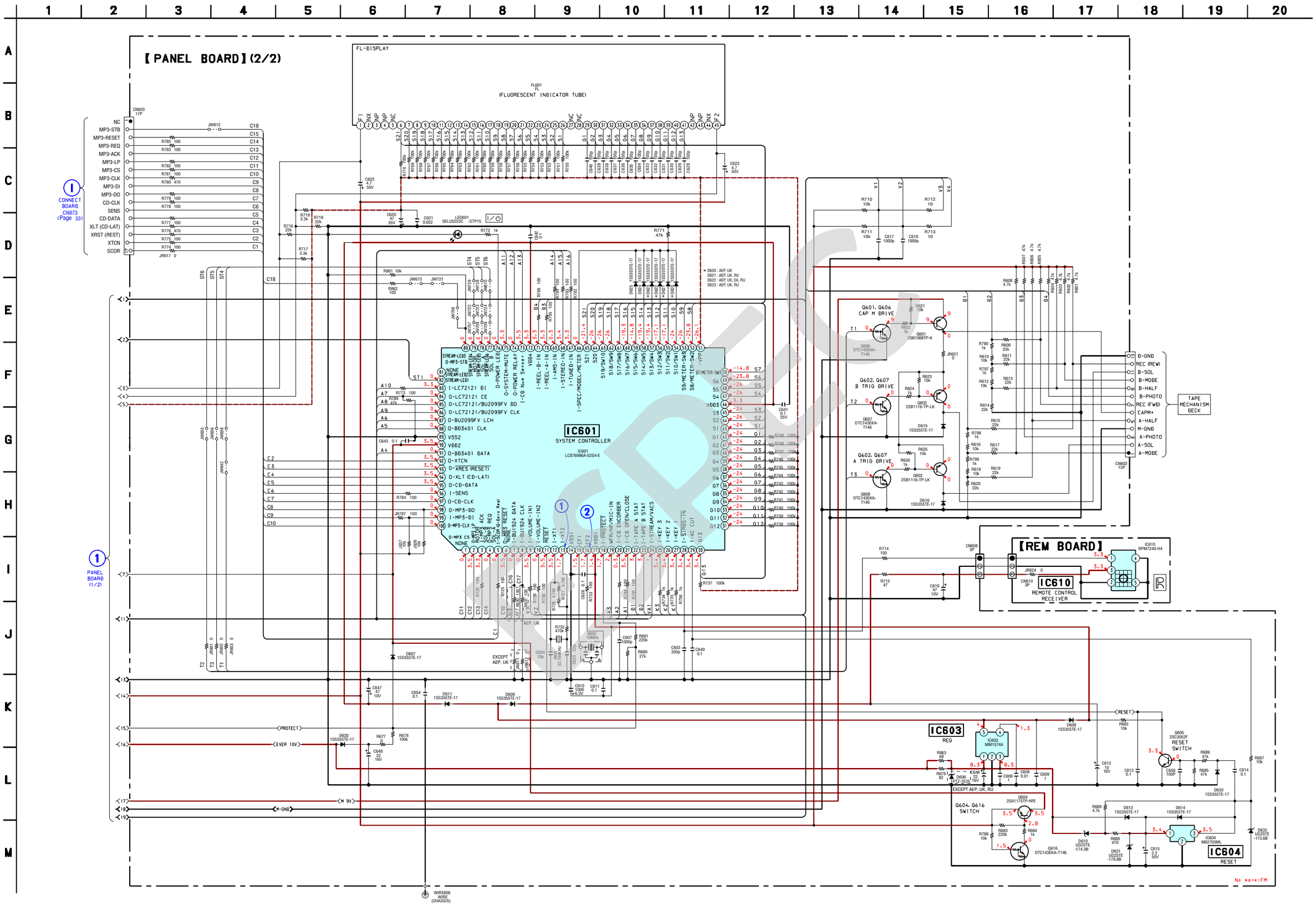
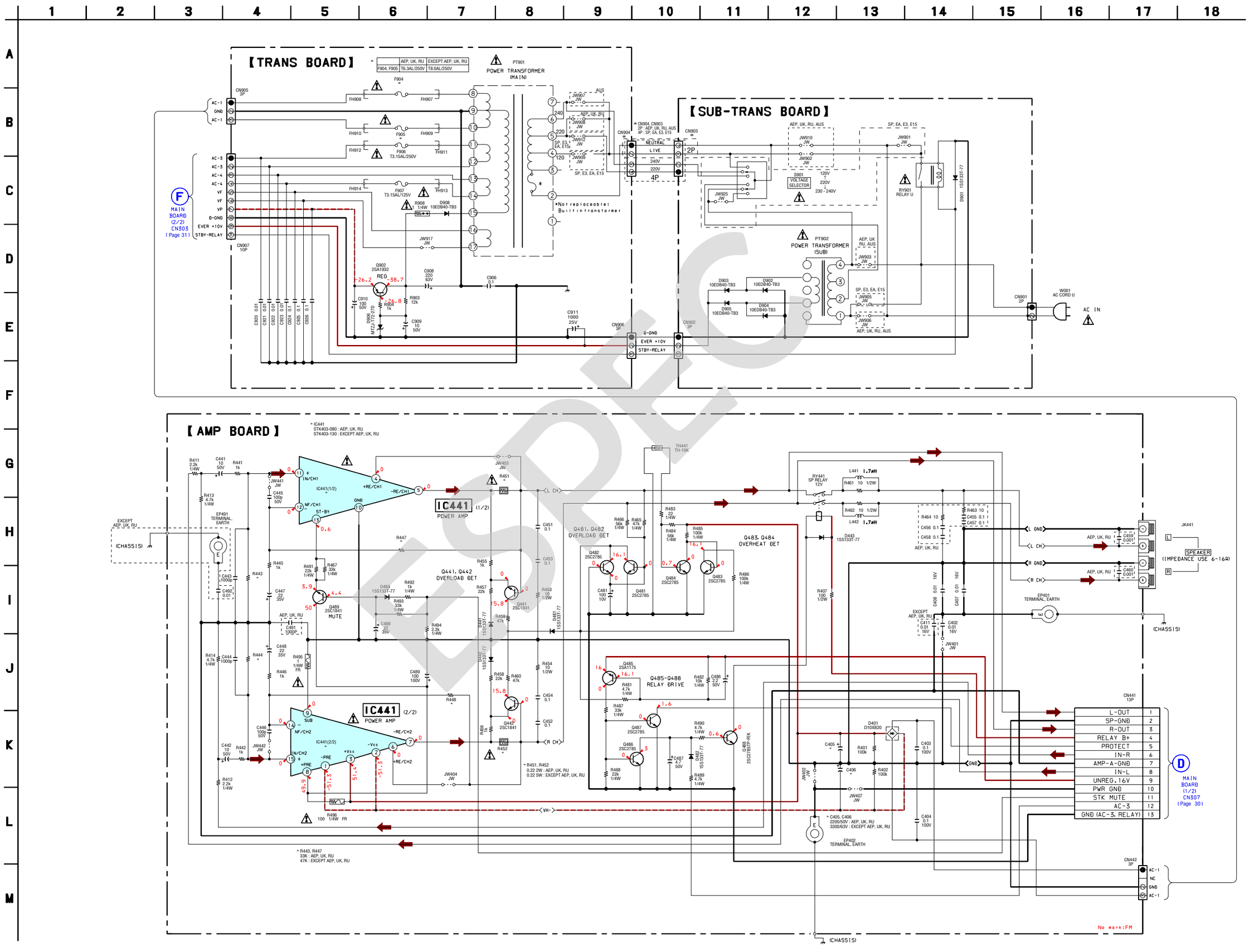
5-13. SCHEMATIC DIAGRAM – PANEL SECTION (2/2) –

• See page 47 for IC PIN FUNCTION DESCRIPTION.

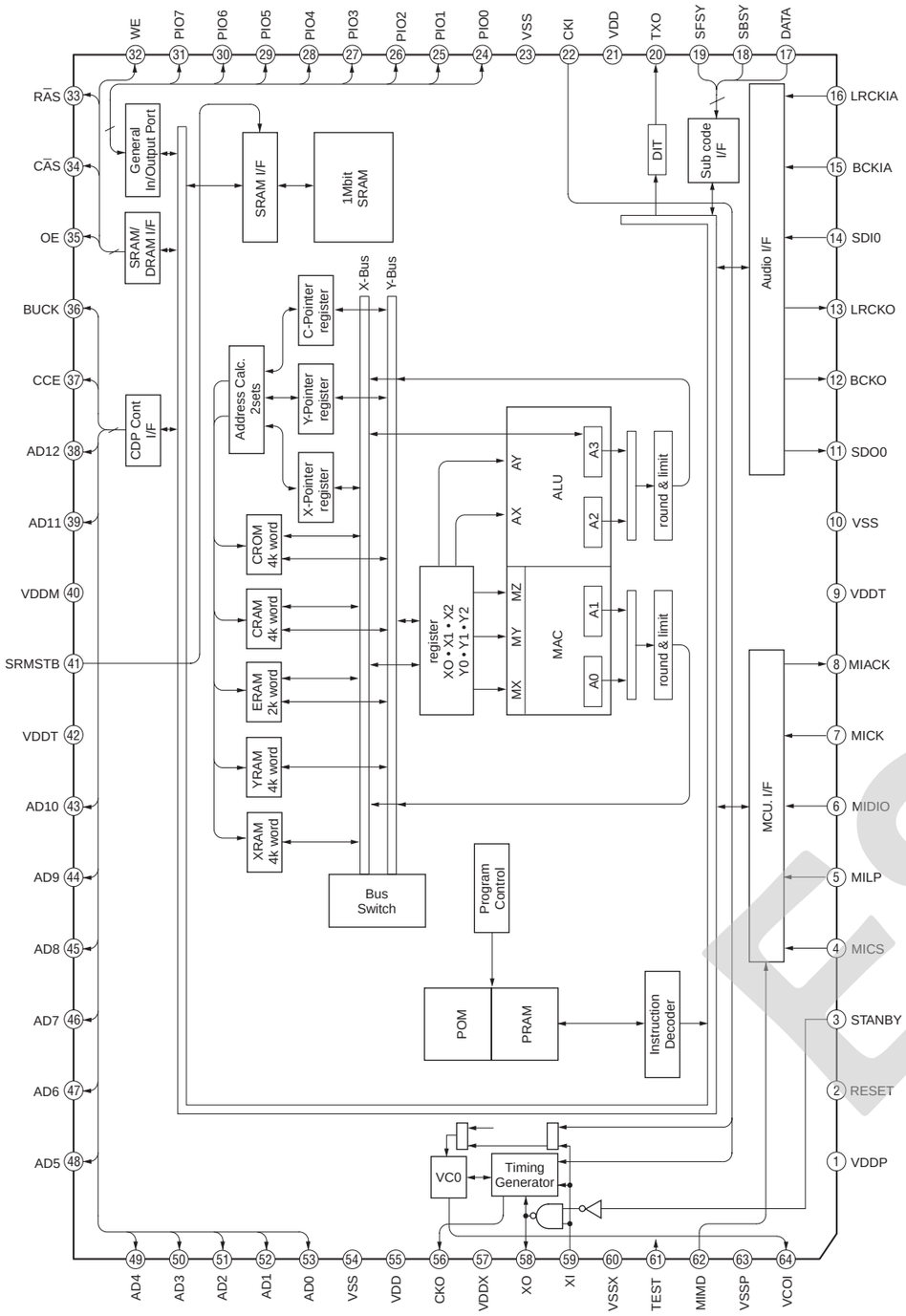


5-18. SCHEMATIC DIAGRAM – AMP POWER SECTION –

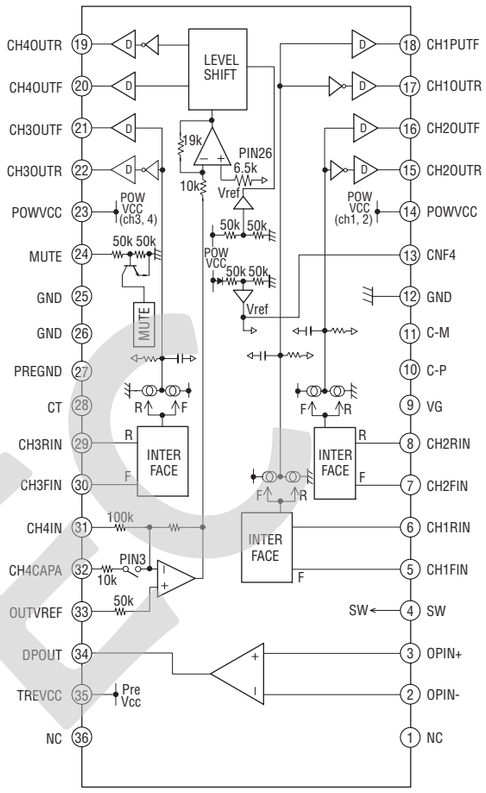


• IC BLOCK DIAGRAMS

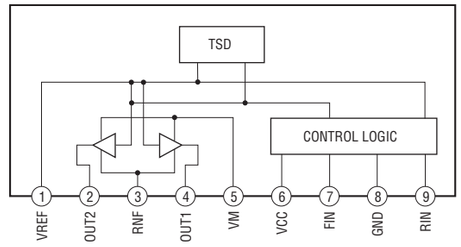
IC301 TC94A34FG-002 (BD81A BOARD)



IC251 BA5947FM (BD81A BOARD)



IC701, 712 BA6956AN (DRIVER BOARD)



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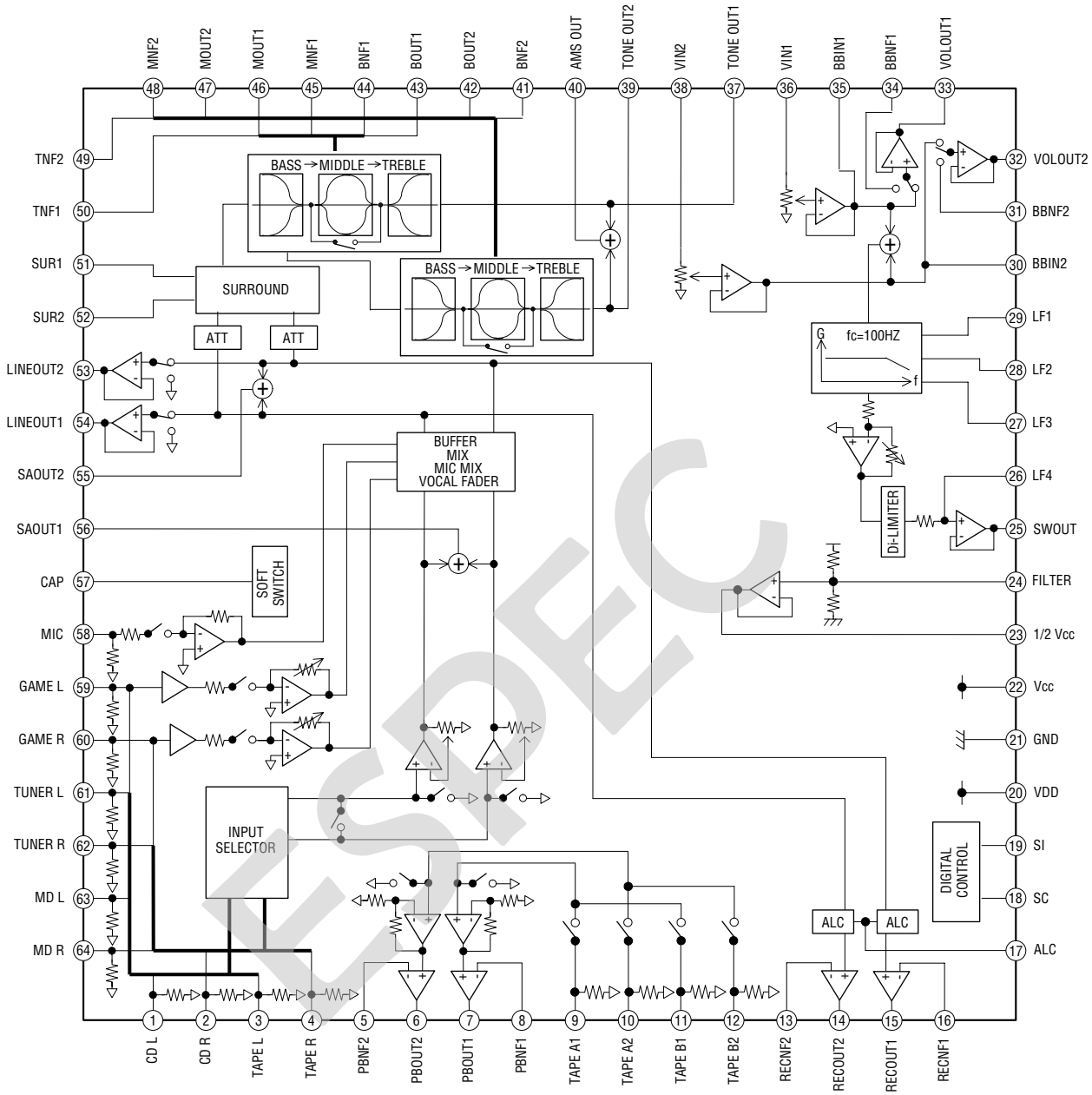
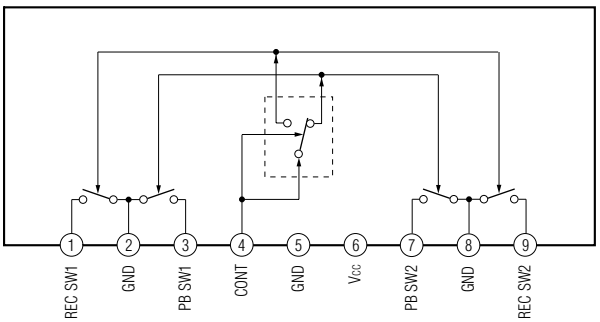
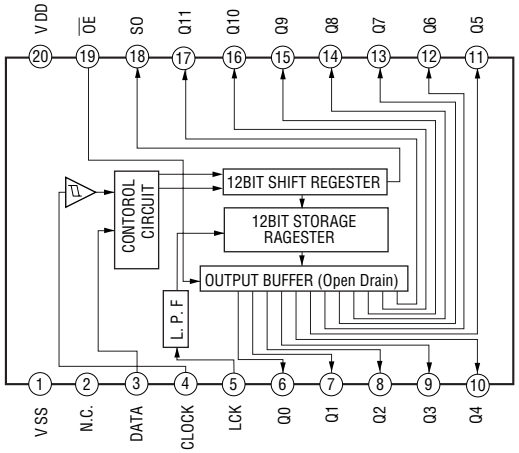
IC101 BD3401KS2 (MAIN BOARD)



IC201 BA3126N (MAIN BOARD)



IC371 BU2099FV (MAIN BOARD)



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5-19. IC PIN FUNCTION DESCRIPTION

• IC101 CXD3059AR (RF AMP) (BD81A BOARD)

Pin No	Pin Name	I/O	Description
1	MIRR	I/O	Mirror signal input/output (Not used)
2	DFCT	I/O	Defect signal input/output (Not used)
3	FOK	I/O	Focus OK signal input/output (Not used)
4	VSS	—	Internal digital ground
5	LOCK	I/O	GFS is sampled at 460Hz; when GFS is high , this pin outputs a high signal If GFS is low eight consecutive
6	MDP	O	Spindle motor servo control output
7	SSTP	I	Disk innermost detection signal input
8	IOVSS1	—	I/O digital ground
9	SFDR	O	Sled drive output
10	SRDR	O	Sled drive output
11	TFDR	O	Tracking drive output
12	TRDR	O	Tracking drive output
13	FFDR	O	Focus drive output
14	FRDR	O	Focus drive output
15	IOVDD1	—	I/O digital power supply
16	AVDD0	—	Analog power supply
17	AVSS0	—	Analog ground
18	NC	—	Not used
19	E	I	E signal input
20	F	I	F signal input
21	TEI	I	Tracking error signal input to DSSP block
22	TEO	O	Tracking error signal output from RF amplifier block
23	FEI	I	Focus error signal input to DSSP block
24	FEO	O	Focus error signal output from RF amplifier block
25	VC	I/O	Center voltage output from RF amplifier block
26	A	I	A signal input
27	B	I	B signal input
28	C	I	C signal input
29	D	I	D signal input
30	NC	—	Not used
31	AVDD4	—	Analog power supply
32	RFDCO	O	RFDC signal output (Not used)
33	PDSENS	I	Reference voltage pin for PD
34	AC_SUM	O	RFAC summing amplifier output
35	EQ_IN	I	Equalizer circuit input
36	LD	O	APC amplifier output
37	PD	I	APC amplifier input
38	NC	—	Not used
39	RFC	I	Equalizer cut-off frequency adjustment pin
40	AVSS4	—	Analog ground
41	RFACO	O	RFAC signal output
42	RFACI	I	RFAC signal input or EFM signal input
43	AVDD3	—	Analog power supply
44	BIAS	I	Asymmetry circuit constant current input
45	ASYI	I	Asymmetry comparator voltage input
46	ASYO	O	EFM full-swing output (Low = VSS, High = VDD)
47	VPCO	O	Wide-band EFM PLL charge pump output
48	VCTL	I	Wide-band EFM PLL VCO2 control voltage input
49	AVSS3	—	Analog ground

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Pin No.	Pin Name	I/O	Description
50	CLTV	I	Multiplier VCO1 control voltage input
51	FILO	O	Master PLL (slave = digital PLL) filter output
52	FILI	I	Master PLL filter input
53	PCO	O	Master PLL charge pump output
54	AVDD5	—	Analog power supply
55	DDVROUT	O	DC/DC converter output
56	DDVRSEN	I	DC/DC converter output voltage monitor pin
57	AVSS5	—	Analog ground
58	DDCR	I	DC/DC converter reset pin
59	NC	—	Not used
60	BCKI	I	D/A interface bit clock input
61	PCMDI	I	D/A interface serial data input (2's COMP, MSB first)
62	LRCKl	I	D/A interface LR clock input
63	LRCK	O	D/A interface LR clock output f = Fs
64	VSS	—	Internal digital ground
65	PCMD	O	D/A interface serial data output (2's COMP, MSB first)
66	BCK	O	D/A interface bit clock output
67	VDD	—	Internal digital power supply
68	EMPH	O	High when the playback disc has emphasis, low it has not
69	EMPHI	I	High when de-emphasis is ON, low when input OFF
70	IOVDD2	—	I/O digital power supply
71	DOUT	O	Digital Out output
72	TEST	I	Test pin Normally ground
73	TES1	I	Test pin Normally ground
74	IOVss2	—	I/O digital ground
75	NC	—	Not used
76	XVSS	—	Master clock ground
77	XTAO	O	Crystal oscillation circuit output
78	XTAI	I	Crystal oscillation circuit input
79	XVDD	—	Master clock power supply
80	AVDD1	—	Analog power supply
81	AOUT1	O	Lch analog output
82	VREFL	O	Lch reference voltage
83	AVSS1	—	Analog ground
84	AVSS2	—	Analog ground
85	VREFR	O	Rch reference voltage
86	AOUT2	O	Rch analog output
87	AVDD2	—	Analog power supply
88	NC	—	Not used
89	IOVDD0	—	I/O digital power supply
90	RMUT	O	Rch "0" detection flag (Not used)
91	LMUT	O	Lch "0" detection flag (Not used)
92	NC	—	Not used
93	XTSL	I	Crystal selection input (Not used)
94	IOVSS0	—	I/O digital ground
95	XTACN	I	Oscillation circuit control Self-oscillation when high, oscillation stop when low
96	SQSO	O	Subcode Q 80-bit and PCM peak and level data output CD TEXT data output
97	SQCK	I	SQSO readout clock input

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Pin No.	Pin Name	I/O	Description
98	SBSO	O	Subcode P to W serial output
99	EXCK	I	SBSO readout clock input
100	XRST	I	System reset Reset when low
101	SYSM	I	Mute input Muted when high
102	D ATA	I	Serial data input from CPU
103	VSS	—	Internal digital ground
104	XLAT	I	Latch input from CPU The serial data is latched at the falling edge
105	CLOCK	I	Serial data transfer clock input from CPU
106	VDD	—	Internal digital power supply
107	SENS	O	SENS output to CPU
108	SCLK	I	SENS serial data readout clock input
109	ATSK	I/O	Anti-shock input/output
110	WFCK	O	WFCK output (Not used)
111	XUGF	O	XUGF output (Not used)
112	XPCK	O	XPCK output (Not used)
113	GFS	O	GFS output (Not used)
114	C2PO	O	C2PO output (Not used)
115	SCOR	O	High output when the subcode sync, S0 or S1, is detected
116	VDD	—	Internal digital power supply
117	C4M	O	4 2336MHz output (Not used)
118	WDCK	O	Word clock output f = 2Fs (Not used)
119	COUT	I/O	Track number count signal input/output (Not used)
120	NC	—	Not used

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• IC601 LC876996A-52S4-E (SYSTEM CONTROLLER) (PANEL BOARD)

Pin No	Pin Name	I/O	Description
1	O-MP3 CS	O	CS output to CD Digital Processor(Not used)
2	O-MP3 LP MOTER	O	Motor signal output
3	I-MP3 ACK SOL-B	I	Motor signal input
4	O-MP3 REQ SOL-A	O	Motor signal output
5	I-SCOR	I	CD Scor input
6	$\overline{\text{O-MP3 RESET}}$	O	RESET output to CD Digital Processor
7	I-BU1924 DATA	I	Data input(Not used)
8	I-BU1924 CLK	I	Clock input(Not used)
9	I-VOLUME-IN1	I	Volume signal input from the encoder
10	I-VOLUME-IN2	I	Volume signal input from the encoder
11	$\overline{\text{RESET}}$	I	Reset input
12	I-XT1	I	Connection for input a crystal resonator
13	I-XT2	O	Connection for input a crystal resonator
14	VSS1	—	Ground
15	CF1	I	Connection for input a ceramic resonator
16	CF2	O	Connection for input a ceramic resonator
17	VDD1	—	Power supply
18	$\overline{\text{I-PROTECT}}$	I	Power amplifier circuit protection signal input
19	WFR/HP/MIC-IN	I	SubWoofer or Headphone detection signal input
20	I-CD ENCODER	I	Signal input from the CD encoder
21	I-CD OPEN/CLOSE	I	CD tray open switch signal input
22	I-TAPE A START	I	TAPE A switches signal input
23	I-TAPE B START	I	TAPE B switches signal input
24	I-STREAM/VACS	I	Stream/Vacs signal input
25	I-KEY 3	I	Function key input
26	I-KEY 2	I	Function key input
27	I-KEY 1	I	Function key input
28	$\overline{\text{I-SIRDS-IN}}$	I	Data input from the remote contorol receiver
29	I-AC CUT	I	Power down signal input
30	G13	O	FL tube grid signal output
31	G12	O	FL tube grid signal output
32	G11	O	FL tube grid signal output
33	G10	O	FL tube grid signal output
34	G9	O	FL tube grid signal output
35	G8	O	FL tube grid signal output
36	G7	O	FL tube grid signal output
37	G6	O	FL tube grid signal output
38	G5	O	FL tube grid signal output
39	G4	O	FL tube grid signal output
40	G3	O	FL tube grid signal output
41	G2	O	FL tube grid signal output
42	G1	O	FL tube grid signal output
43	S1	O	FL tube segment signal output
44	S2	O	FL tube segment signal output
45	S3	O	FL tube segment signal output
46	VDD3	—	Power supply
47	S4	O	FL tube segment signal output
48	S5	O	FL tube segment signal output
49	S6	O	FL tube segment signal output
50	S7/METER-SW1	O	FL tube segment signal output

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Pin No	Pin Name	I/O	Description
51	-VPP	—	Power supply (-)
52	S8/METER-SW2	O	FL tube segment signal output
53	S9/METER-SW3	O	FL tube segment signal output
54	S10/SW1	O	FL tube segment signal output
55	S11/SW2	O	FL tube segment signal output
56	S12/SW3	O	FL tube segment signal output
57	S13/SW4	O	FL tube segment signal output
58	S14/SW5	O	FL tube segment signal output
59	S15/SW6	O	FL tube segment signal output
60	S16/SW7	O	FL tube segment signal output
61	S17/SW8	O	FL tube segment signal output
62	S18/SW9	O	FL tube segment signal output
63	S19/SW10	O	FL tube segment signal output
64	S20	O	FL tube segment signal output
65	S21	O	FL tube segment signal output
66	I-SPEC/MODE/METER	I	METER swich input
67	I-TUNED-IN	I	Tuning a frequency signal input
68	I-STEREO-IN	I	Stereo tuning signal input
69	I-ASM-IN	I	ASM signal input
70	I-REEL-A-IN	I	A deck photo sensor signal input
71	I-REEL-B-IN	I	B deck photo sensor signal input
72	VDD4	—	Power supply
73	I-CD Num Senser	O	Table address sensor swich signal input
74	O-POWER-RELAY	O	POWER RELAY control output
75	O-SYSTEM-MUTE	O	System muting signal output
76	O-POWER-LED	O	POWER LED control signal output
77	STREAM-LED6 SOLB	O	Illumination LED control signal output(Not used)
78	STREAM-LED5 SOLA	O	Illumination LED control signal output(Not used)
79	STREAM-LED4 MOTOR	O	Illumination LED control signal output(Not used)
80	STREAM-LED3 MP3-STB	O	Illumination LED control signal output(Not used)
81	STREAM-LED2	O	Illumination LED control signal output(Not used)
82	STREAM-LED1	O	Illumination LED control signal output(Not used)
83	I-LC72121 DI	I	Data input from Tuner
84	O-LC72121 CE	O	Chip select output to Tuner
85	O-LC72121/BU2099FV DO	O	Data input from Tuner and SP Driver
86	O-LC72121/BU2099FV CLK	O	Clock output to Tuner and SP Driver
87	O-BU2099FV LCH	O	LCH output to SP Driver
88	O-BD3401 CLK	O	Clock output to Sound Processor
89	VSS2	—	Ground
90	VDD2	—	Power supply
91	O-BD3401 DATA	O	Data output toSound Processor
92	O-XTCN	O	CD xtcn signal output
93	$\overline{\text{O-XRES(RESET)}}$	O	CD reset signal output
94	O-XLT(CD-LAT)	O	CD xlt signal output
95	O-CD-DATA	O	CD data output
96	I-SENS	I	CD sens input
97	O-CD-CLK	O	CD clk output
98	O-MP3-DO	O	Clock output to CD Digital Processor(Not used)
99	I-MP3-DI	I	Data input from CD Digital Processor(Not used)
100	O-MP3-CLK	O	Clock output to CD Digital Processor(Not used)

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